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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,310	07/14/2000	Hiroshi Narai	Q60136	8380

7590 09/08/2004

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2100 Pennsylvania Avenue NW  
Washington, DC 20037-3202

EXAMINER
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JOYCE, WILLIAM C

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/617,310	Applicant(s) NARAI ET AL.	
	Examiner William C. Joyce	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 May 2004.  
2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 4,6 and 15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 4,6 and 15 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is in response to the amendment filed May 28, 2004 for the above identified patent application.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 4, 6, and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added limitations "wherein the layer includes a non-metallic inclusion having a maximum diameter of less than 0.1 mm" and "wherein said toroidal-type continuously variable transmission component has a breaking life of greater than or equal to 150 hours" does not appear to have been described in the original disclosure. With respect to the life of the component being greater than 150 hours, the original specification does not appear to clearly disclose the combination of the size and the location of an inclusion provides the claimed life.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4, 6, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-The limitation "wherein said toroidal-type continuously variable transmission component has a breaking life of greater than or equal to 150 hours" is unclear because the claim does not define the testing procedure used in determining the life of the component. It is understood the life of the component depends on its operating environment. For example, is the component subjected to controlled test having a predetermined load and a predetermined speed? Is applicant claiming the life of the component based on normal operating conditions?

-The limitation "said nonmetallic inclusion has a maximum diameter or 50µm or more" (claim 15) is not clear and fails to further limit the scope of the claimed invention.

### ***Claim Rejections - 35 USC § 102***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 4, 6, and 15, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Okubo et al. (US Patent 6,113,514).

Okubo et al. discloses a manufacturing procedure for producing a disk for a toroidal continuously variable transmission. Referring to column 2, lines 37-43, Okubo

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et al. discloses that the size of non-metallic inclusions are known to influence the strength of a material with respect to repeated bending stress. The manufacturing procedure of Okubo et al. prevents non-metallic inclusions of high density from being present within a predetermined distance 1.5b of the traction surface, wherein a high density inclusion is .01mm or larger (for example, see column 5, lines 43-48). Examiner notes that the predetermine distance 1.5b is considered to fall within the limitation .4mm or less.

With respect to the newly added limitation defining the "layer" as having inclusions, Okubo et al. does not specifically disclose the claim layer as having inclusions, but it is understood that the prior art inherently has the claimed inclusions. Referring to applicant's disclosure (page 2, second paragraph), it was known that even in high-purity steel it is impossible to remove all such defects.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 6, and 15, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitamura et al. (US Patent 5,855,531) in view of Japanese Reference 06-287710 ('710).

Mitamura et al. discloses a toroidal continuously variable transmission having an input disc, and output disc, and roller bearings. Mitamura et al. does not disclose the discs or the bearings having the claimed layer formed at .4 mm or less from a surface thereof such that the layer does not contain a non-metallic inclusion having a maximum diameter of 0.115mm or more. The prior art Japanese Reference '710 teaches forming rolling bearings from steel and not having a non-metallic inclusion greater than .008mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the transmission of Mitamura et al. with rolling bearings formed from steel and not having a non-metallic inclusion greater than .008mm, as taught by Japanese Reference '710, motivation being to increase the durability of the bearings of the transmission.

With respect to the newly added limitation defining the "layer" as having inclusions, Japanese Reference '710 does not specifically disclose the claim layer as having inclusions, but it is understood that the prior art inherently has the claimed inclusions. Referring to applicant's disclosure (page 2, second paragraph), it was known that even in high-purity steel it is impossible to remove all such defects.

### ***Response to Arguments***

9. Applicant's arguments filed May 28, 2004 have been fully considered but they are not persuasive. In view of the above rejection under 35 USC 112 (first and second paragraphs), the newly added limitations fail to define over the prior art.

With respect to the arguments defining the "layer" as having inclusions, the prior art does not specifically disclose the claim layer as having inclusions, but it is understood that the prior art to Okubo et al. and Japanese Reference 06-287710 inherently has inclusions. Referring to applicant's disclosure (page 2, second paragraph), it was known that even in high-purity steel it is impossible to remove all such defects. Accordingly, the claims fail to define over the prior art because they inherently meet the claim limitation of having inclusions positioned in the claimed layer.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (703) 305-5114. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 9/2/04  
William C. Joyce